

ABSTRACT

A production process which comprises
a preform formation step of forming a fiber preform made of
silicon carbide short fibers having heat resistance of
5 1000°C or greater; a sol-gel preparation step of preparing
a sol-gel solution containing a heat resistant compound
having heat resistance of 1000°C or greater; an
impregnation-drying-calcination step of impregnating the
fiber preform with the sol-gel solution, followed by drying
10 and calcining; and a crystallization step of crystallizing
the fiber preform after impregnation, drying and
calcination.